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Official Publication of

PALO ALTO AMATEUR RADIO ASSOCIATION  
(PAARA)

W6OTX

Palo Alto Amateur  
Radio Assn

Affiliated  
Clubs

K6YQT

Menlo Park C-D  
Radio Club

ORGANIZED FOR  
PUBLIC SERVICE, SCIENTIFIC, EDUCATIONAL AND  
SOCIAL BENEFITS TO AMATEUR RADIO OPERATORS  
(A non-profit organization; Incorporated 1956)

NEXT PLANNED FUNCTION

Date: Friday 5 May 1972, 7:30PM.  
Place: Veterans Memorial Bldg, 1455 Madison Ave.,  
Redwood City, Ca.  
Program: San Carlos Amateur Radio Club Host.  
Speaker Larry Reed, W6CTH. He will present  
a travelogue with colored slides of his  
trip through Africa this past summer.  
BRING THE FAMILY- Enjoy the evening

W6OTX

## ADMINISTRATIVE

## OFFICERS

## BOARD OF DIRECTORS

Pres. : Fred Canham, W6QWF  
 V Pres. : Andy Korsak VE3FZK  
 Sect'y : Les Vickery W6AKR  
 Treas'r : Vance Wardlow W6FLE

Chmn : Fred Canham W6QWF  
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 Member : Hal Moore W6DEF  
 " : Ed Fairbanks W6AIN  
 " : Gerry Laxson W6OPA  
 " : Bob Allen W6WQD  
 " : Andy Korsak VE3FZK

## APPOINTMENTS

Chmn TVI Com. Glen Baker W6UOK  
 " Publicity, Larry Rice W6IQT  
 " Membership, Hal Moore, W6DEF  
 Equpt Custodian Ed Fairbanks W6AIN

CCRC Rep-Fred Canham, W6WQF Telephone Com: Larry Rice W6IQT  
 Refreshments & Raffle Com: Andy Korsak VE3FZK  
 Ed Fairbanks W6AIN Les Vickery W6AKR  
 Lee Zalaznik WB6BJB

MENLO PARK C-D RADIO CLUB

Pres. Fred Canham W6QWF; Vice Pres. Glen Baker, W6UOK  
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 Property Custodian: Bob Allen W6WQD (Trustee K6YQT)  
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RADIO OFFICER: Bob Allen W6WQD

Editor: Vance Wardlow, W6FLE; Ph 854 0803; PO Box 911, MP  
 POLICY: Membership includes subscription to PAARAGRAPHS.  
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support your club  
 SUPPORT YOUR CLUB  
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GET INVOLVED

DO SOMETHING

FUTURE PROGRAMS

Friday 2 June: 7:30 PM Menlo Park Recreation Bldg Civic Cent.  
 "Amateur Radio in The USA" A discussion of the effect  
 Amateur Radio has had within the USA. Speakers will  
 be Mr. Tiffany and Mr. Hall from SRI.  
 Wednesday 7 June: PAARA Bd of Dir Mtg Trailer SRI 7:30PM

NEW MEMBERSWELCOME ABOARD FELLOW PAARA PARTICIPATORS

Bob Grace, W6VQV for 10 these many years a "big shot" in Redwood City Amateur Communications. We are happy to have Bob back in the fold. A lot of water has run under the bridge since he bore a hand at getting PAARA off the ground many years ago. Now at SRI Bob will be right in there pitching you can be sure at the times he is needed. Will see u at the mike on Field Day - Eh? Bob.

Bjorn Forsberg SM5UR/6 is especially welcome to the Club. An excellent operator and an outstanding technician Bjorn will be in there solving some of our many and never ending problems. How about a transistorized ham rig as a Club project Bjorn?

Russ Olsen W6IEF has held calls all across the USA. He is a SSB man with a lot of experience on mobile operation. We will look for him on the Emergency Tests as they come up during the year. We will be needing a Team Captain for Field Day - How about it Russ?

NEW MEMBERS  
(Cont'd)

Tom Ohlsson WB6KQZ recently got his general license and is now in there making QSO's with his Clegg-22. He is also mobile and normally works on 2 meters. He holds the RCC and CP-15 so must be a real PARTICIPATOR! We would like to see you get in on the traffic handling on Field Day, Tom. We need good operators.

TO ALL AGAIN  
welcome aboard  
WELCOME ABOARD

Mentioning Tom's General license reminds me that I ran into Carl Service WB6UNK the other day. He had just received a card confirming that he had passed the exam for ADVANCED license! Our very best congratulations to you Carl. GOOD GOING! ! !

MEMBERSHIP DRIVE

Each Member is asked to get in touch with a potential new member. Bring him to the meetings and get him involved in a project.

WE NEED NEW MEMBERS

Let's each get busy and make  
PARTICIPATORS  
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# FOR SALE

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\* \* \* \* \*

Membership in ARRL \$6.50 and you get QST for a year - you better take it for 5 or more years at that price ! ! ! !

### CLUB MEMBERSHIPS

Send \$4 dues to PAARA, P.O. Box 911, Menlo Park, Ca.

This offer ends 1 July

\* \* \* \* \*

FIELD DAY - - - - - POWDER PUFF DERBY  
Starting the last weekend in June and running on through the first week in July there will be a lot of activity on the part of PAARA. Operators are needed daily and through the night. If you can get time out for a day shift of operating be sure to let Fred Canham know. Here is the chance for you night workers and our "retired" to PARTICIPATE.

### FIELD DAY 24-25 JUNE

I will participate in FIELD DAY this year:

Name \_\_\_\_\_ Call \_\_\_\_\_ Phone \_\_\_\_\_

Team desired: CW \_\_\_\_\_ SSB \_\_\_\_\_ VHF \_\_\_\_\_ UHF \_\_\_\_\_ HOURS \_\_\_\_\_

OPERATE \_\_\_\_\_ LOG \_\_\_\_\_ EQUIPMENT AVAILABLE \_\_\_\_\_

I will participate in the POWDER PUFF DERBY 1-5 July.  
YES \_\_\_\_\_ NO \_\_\_\_\_

Send the above information to Fred Canham W6QWF,  
691 Casita Way, Los Altos, Ca. 94022.

Fred is making up the PARTICIPATOR list, Get in on it.



Meeting 7 April 1972:

Fred Canham W6QWF, President of PAARA opened the meeting with the announcement of a heart attack by Fred Barry K6RTU. Fred is now back on his feet and recovering nicely. GOOD GOING FRED !!

Fred Canham announced that he had been able to acquire and donate to the QSL Bureau several card files to assist in cataloging the many QSL cards they handle. Everyone should send in a 5x7 envelope with a return address on it and his Name and Call sign in the upper left corner. YOU JUST MIGHT HAVE AN EXOTIC QSL WAITING THERE FOR YOU. Send you envelope to the QSL BUREAU, P.O. Box 11, Los Altos Ca. 94022.

CCRC has set up a Committee for FIELD DAY Rules. It has completed the rules for the competition for the PLAQUE now held by the San Jose Club.

Committee Reports:

Andy Korsak VE3FZK reported some progress on the PAARA ATV. He has contacted Sunnyvale and Cupertino as well as more local ATV hams. Bill Jackson W6OWQ remains his most consistent contact. AND YOU SHOULD SEE THOSE TEST PATTERNS! WOW!!!

Hal Moore W6DEF reports some progress on the membership drive.

### Committees (Cont'd):

Lee Zalaznik reports he has added several states to the PAARA WAS project. He needs help in manning the station. Get in touch with Lee on his phone: 325 1168. Or contact W6WBJ on the Monday night Net.

Ed Fairbanks W6AIN reports the SWAN 350 donated by Doc Tripp K6EJL is installed in the Trailer and working fine. Andy made the first contact with it - put it on the air, called a texan and got a S9 report. VERY FINE BUSINESS!

Gene Sussli WA6NVU of the San Carlos Club reported that he has started setting up the AMATEUR RADIO OPERATOR BLOOD BANK. Preliminary arrangements have been made.

### SPEAKER:

Andy introduced Nick Marshall W6OMO who proceeded to give us a fine rundown on PROJECT MOONRAY.

The first call assigned was W6EE. The four dots in the 6 and the EE call many times came out HI !! Thus they are now using the symbol SS to activate the instruments.

Nick covered the subjects outlined in last month's PAARA-GRAPHS. He added many very interesting details of the problems involved in getting the Project under way.

FINE TALK NICK - THANKS

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SEE JIM & GEORGE

MOONRAY I

For those of you who are interested in more data on the MOONRAY I project Nick Marshall's address in 11571 Buena Vista Drive, Los Altos, Ca. 94022. Or you may want to write to NASTAR at P.O. Box T, Syosset, Long Island, New York 11791.

Nick explained that due to the lunar nutation the antenna on MOONRAY must have a fan beam of about 17 degrees. It is designed for dual purpose for 432 as a yagi and a dish for 1296.

The nuclear power supply is necessary since solar cells could operate only during the 14 days of sunshine on the moon then be dead for 14 days of darkness. The plutonium for the power supply costs \$240,000.00. Nick and his cohorts obtained a loan of the plutonium (being a little short on cash at the time!) so it MUST BE RETURNED! ! !

There is no firm commitment for the amateur equipment for MOONRAY on Apollo 16. However a space has been discovered in the battery compartment made available due to a redesign of the old batteries. The equipment is being redesigned to fit into this potential space.

MOONRAY in being designed

to provide an emergency channel of communications for the astronauts. This give an additional incentive for carrying the amateur equipment. A slow scan TV of the earth is included in the functions. The picture can be picked up by hams. who can use a polaroid camera with red, green and blue filters to get a color picture. Also added will be a pendulum arrangement to give an indication of the pull of the sun and moon on the earth.

Nick points out that NOW is the time to get started on our 432 and 1296 equipment to be prepared for the time of the shot and placement of MOONRAY I on the moon some time within the next couple of years. The equipment outlined in the ARRL Handbook is adequate for monitoring these transmissions.

An excellent means of getting prepared with some experience on 432 would be to get together with Andy Korsak on the PAARA ATV project. He has done a lot of research.

\* \* \* \* \*

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AN EYE-BALL QSO

A real nice note from Hal Moore, W6DEF, tells of a visit with Ken Wilder K6RB who lives in Atherton. Ken is a real old timer who has maintained an active interest in ham radio. He and Hal discussed the AREC and came to the conclusion that Ken could do a lot of good by getting on the Net each week.

Ken tells about constructing a "gadget" away back there in about 1908 similar to our present day sophisticated burglar alarms. Thru a wireless arrangement he could ring a bell anywhere in the house! ! Ken is still a "gadgeteer" and would rather do that than operate. However he is right in there with a lot of QSO's.

\*\*\*\*\*

Speaking of gadgets - Thru CRC CIRCLE we get the info from Jim Peterson WAØLVM that he has done something about getting an accurate weather report. As he says we almost always exchange weather on our QSO's. Jim works out of his basement so needed some indicators outside.

He put a wind vane on a small selsyn outside & the other selsyn on a panel in the shack. For windspeed he made up a

small anemometer and attached it to a small DC hobby type motor which acts as a generator. Output is read in microamps on a meter with switched resistors for 2 ranges. Calibration was done by mounting the whole unit on the car and checking out at speed up to 70MPH.

For temperatures he made up a gadget using a thermistor bridge circuit. He mentions a circuit shown in February 1971 Popular Science. Says its a pleasure to sit in a warm shack and get the temperature and chill factor outside! ! He can now give a REAL weather report on his QSO's.

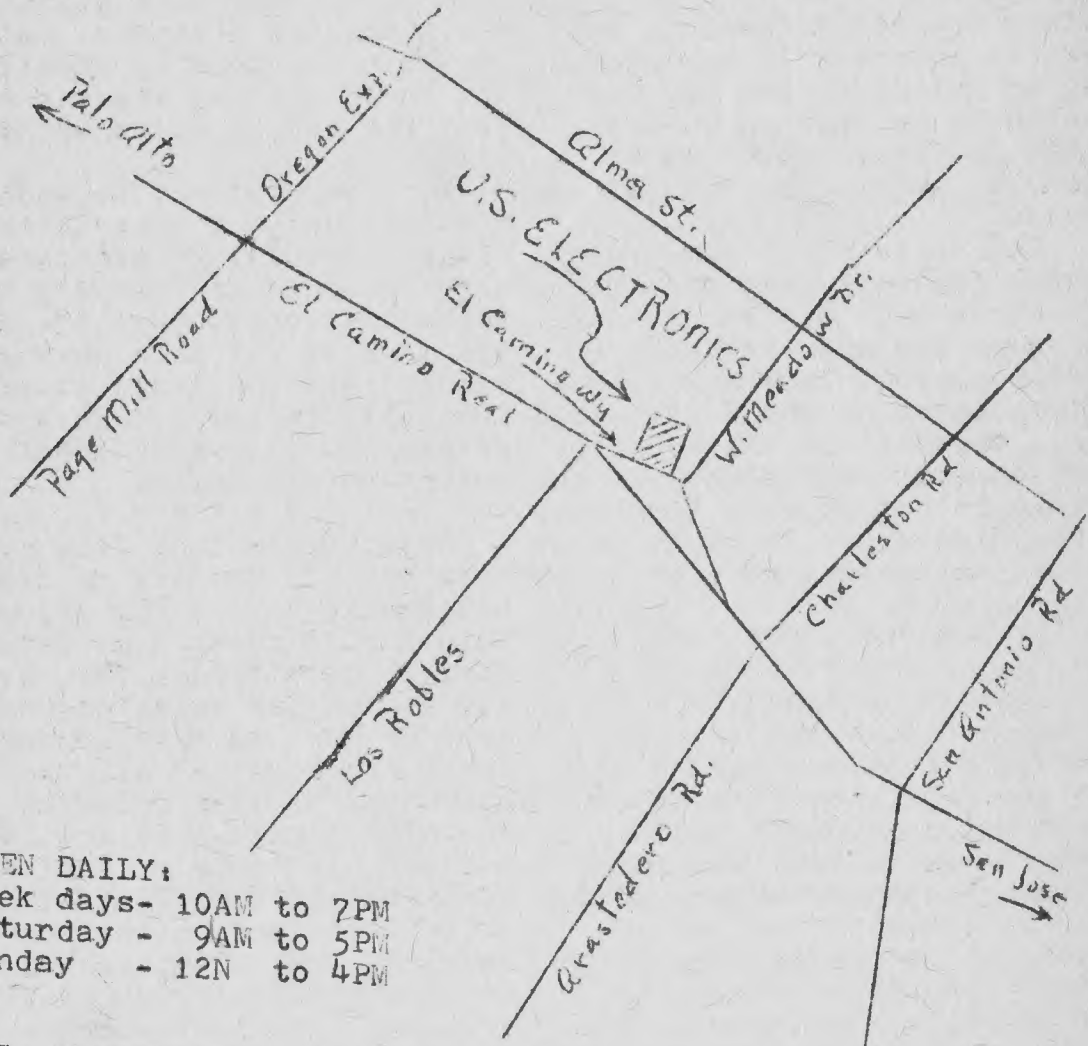
\*\*\*\*\*

Andy Korsak took time out from his ATV project to take his family to the big golden Gate Fields races last Saturday. He developed a very exotic system for selecting winners! He went to the paddock for a "looksee" at all the entrants. He then selected the one which looked like a winner and put his money on that horse. VERY SCIENTIFIC! ! !

As it turned out he won one and lost one. So guess we cannot downgrade his system Eh?

In any case it was a lot of fun and a change from blownout RESISTORS and cranky harmonics on 432Mc.

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 W6RXW George Baker 854 4649

\* \* \* \* \*

CIVIL DEFENSE

Mike Bedwell, City Manager, Menlo Park, tells me they are going ahead on the preparation of the bomb-proof basement of the Administration Building in the Civic Center for a coordinated Communications Center. The plans are completed and some of the installation of materials has started.

Bob Allen, W6WQD the RADIO OFFICER has completed a revision of the Menlo Park C-D Plan for submission to headquarters for approval. The original has been sent to Jerry Greaves the San Mateo County coordinator for C-D. A corrected copy has been delivered to the City of Menlo Park.

\* \* \* \* \*

JOIN THE CLUB  
 BECOME A PARTICIPATOR NOW  
 PAY YOUR DUES

BOARD OF DIRECTORS MEETING  
 12 April 1972

The PAARA Board met at the trailer. Les Vickery, Secretary, read the minutes of the last meeting. Treasurer made his report.

Hal Moore, Membership Committee, reported several contacts. Lectures at high schools were recommended. Hal will arrange to phone all newcomers to the Peninsula.

Andy Korsak reports on progress on the ATV Committee. Still slow going - needs volunteers.

A misunderstanding between some members of the Club and guards at SRI gate was discussed. Club members MUST understand that SRI has a responsibility for general security and that the Club is not an official function of SRI. Thus we MUST be accompanied by an official employee of SRI when we work on or in the Trailer. The guards have a key to the trailer and your Membership Card is good identification.

Guest speakers will be put on the PAARAGRAPHS mailing list for several months.

A letter of appreciation will be prepared for SRI.

Keys to the trailer will be kept to the minimum to avoid broad responsibility for any missing items from the trailer.

FD discussed & PP Derby.

OUR TRAVELERS

Ed Fairbanks, W6AIN, is the only one of our regular travellers to report in for a trip. He is meeting his 3 brothers in Philadelphia for an annual "Get-together". Boy what a powwow that must be! With 4 Fairbanks boys all telling of their adventures it would be nice to have a taperecorder in the chandelier! GOD TRIP ED.

\*\*\*\*\*

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\*\*\*\*\*

The coffee urn was acting up and we old Navy men were complaining of the weak coffee. Ed Fairbanks found that the thermostat had a bad connection, put in a new one - and now no more complaints!!!

Barry Lar Rieu WA6UIM one of our new members, missed the last meeting due to the fine snowpack! Good skiing Lar!!

HEY YOU DX'ers TAKE NOTICE! "MOSCOW (AP) Radio Hams throughout the world can now contact their Soviet counterparts by using the call signal USSR-50, the Soviet News Agency TASS said." (from the 4 March San Jose Mercury via FARS FOOTPRINT.

\*\*\*\*\*

ARMED FORCES DAY

May 20 1972

The Navy's big radio station NPG, using their highpower transmitters at Mare Island will be on all the VHF bands on ARMED FORCES DAY making contacts and QSO's with all hams. The Marin Amateur Radio Club members will participate in manning the Navy facilities at the Navy Receiving Station. Here is a chance to get a very nice QSL card for your collection.

\*\*\*\*\*

For you who wonder why the FCC requires proficiency in CW to get a license. The International Telecommunications Convention (Geneva 1959) Radio Regulations state: SEC.3(1) Any person operating the apparatus of an amateur station shall have proved that he is able to send correctly and receive correctly by ear, texts in Morse code signals."

OK?



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TECHNICAL TOPICS de Andy VE3FZK/W6AMATEUR TV FROM W6OTX

We finally succeeded in sending pictures from W6OTX (QTH is Menlo Park) to more distant hams. First, Alf Modine K6TWF in Sunnyvale reported an almost snow-free picture and could see us real fine. Then, Frank Miller, WA6BTH in San Bruno reported seeing it and reading our SRI telephone number plus the trailer extension 266 which was in fairly fine print. So we're getting some video out!

The reason for the improvements over the situation reported last month is probably the difference in losses at UHF caused by connectors not matching properly. We installed some special RG-17 connectors, donated by Bill Jackson W6OWQ, on our RG-17, donated by SRI. We also cut down the length of the RG-17 from 130 ft. or so to about 80 ft. This must have greatly increased the power reaching our J-beam antenna on top of SRI's steam plant.

Our transmitter is an ART-26 borrowed from Jim Talt, and we are still debating if we should buy it or build or buy something more powerful. However, just tonight an ATV ham by the name of Dave Krupp called me and offered to lend us some ATV equipment. Dave has built two color TV cameras using the CBS rotating wheel concept, and he has most of the parts of one of them plus a powerful transmitter at his home where he now has no room for them, so he is willing to lend them to the club. I'll see him about this before the next meeting and report on the situation then.

Back to our ATV QSO's, we also transmitted pictures of our Board of Directors meeting, at which time Paul Thekan WA6DQU, a young member of PAARA, was receiving our video at his apartment in Redwood City, using my bandsaw UHF TV antenna tied to his 40M vertical with my scarf! So it doesn't take much to pick up our baaudacious 5 watts (or so) of video. Paul is on Woodside Road, near Alameda de las Pulgas.

Well, PAARA members, let's all build a 440 MHz to Channel 3 converter like the one I published last month, or just pad down a UHF

converter ripped out of an old TV, and we will have lot's of fun with this TV project. I would like to set up a regular schedule of pictures from W6OTX, eg. Monday night CD drills on 2M with video of ARRL bulletins., amateur radio theory classes, maybe even technical movies. But we'll need some viewers! We now have only three local hams to watch us.

### COLOR TV CAMERA PROJECT

After making sure our black and white camera is working well and transmitting FB pictures over the air, I wheeled the 19 inch rack of camera equipment out of the W6OTX trailer and into my lab at SRI where I am now back to my color TV camera construction. I gave up on the relay lens system I built last month using cheap lenses, as their resolution was so bad that I could hardly focus on even very coarse stripes in the color encoding filters. I discovered that the 100 mm lens that came with the camera worked very well as a 1:1 relay lens, and so I went on to construct a synchronous detector to pick off the subcarriers in the video created by the striped filter. I slapped together a circuit using the SIGNETICS NE561 phase lock loop, and it worked like a charm! I am picking off the encoded video by tuning the PLL to the  $1.5 \text{ MHz}$  carrier frequency of my present striped filter, but I will have to make filters with finer stripes, corresponding to subcarriers about 3 to  $5 \text{ MHz}$ , as the resolution of the video is disturbed by the presence of stripes (i.e. fine details of the picture get lost in the stripes.)

The next thing to be done is to build up two more identical PLL synchronous demodulators so the <sup>three</sup> ~~two~~ primary colors can be picked off on three subcarriers. So far it looks pretty hopeful for the PLL approach. Luckily, I got a bunch of NE561's for nothing from Art Fury at SIGNETICS about a year ago. It seems that the 561 PLL will lock on to a subcarrier in the video very nicely without interference from other subcarriers so I might get away with three subcarriers closely spaced. It's quite interesting watching the video off the AM output of the 561, as you tune the VCO capacitor. An image appears criss-crossed by stripes when not phase-locked to

the subcarrier, as as you approach the subcarrier frequency, the stripe set thicker and thicker until they disappear altogether at phase lock. Maybe some EE engineer out there reading this can help me figure out what's going on here, but anyway I'm glad my idea to use a PLL worked ok.

I thought I might have to use some tuned circuits ahead of the PLL to filter out just the desired bandpass around the subcarrier, but it turned to be unnecessary. In other words, the PLL makes an excellent filter by itself, for this purpose. As some readers might recall I had a lot of trouble with the PLL, being "pulled around" by adjacent strong signals in my 2-meter receiver application of it a couple of years ago.

By the way, I don't know if I mentioned it in previous articles, but the NE 567 PLL which is a logical output PLL makes an excellent extremely sharp selectivity CW filter. Call me for info. at 326-6200 ext. 2853, or 854-2759 or write PAARA Box 911 Menlo Park, 94025.

The next phase after building the synchronous demodulators for the three color subcarriers will be to build a color modulator, i.e. a standard NTSC color video encoder. If the reader is not familiar with color TV theory, I will explain (I just picked up whatever I know about color TV from some training manuals I just bought.) Standard color TV is transmitted by modulating a 3.58 MHz subcarrier with "chroma", or color-difference, information. That is, the "chroma" information tells you how the light differs from white light and in what way it differs at each instant. This color-difference information is expressed by the phase and amplitude of the chroma signal. The amplitude tells you the strength of the color minus white average, while the phase tells you what combination of the three primary colors, red, blue and green, you have at that instant. As the phase goes around from 0° to 360 degrees, the color represented passes through red, blue and green spaced at 120 degrees.

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SAN CARLOS BUGLE  
Report of the San Carlos Amateur Radio Club  
(SCCDARC)

Jack McEnnerney, W6LII reports that the code classes at the San Carlos Fire Station #2, which he and Jack Pierce, WA6CCH are conducting, are in full gear. There are 11 students participating in this class and some come to us from San Mateo and Redwood City. Jack informs us that they make above average progress, possibly because each brings a tape recorder to class and this allows these students to practice at home.

Jack has also taken the tiger by the tail and is helping the recently graduated and licensed Novices to get on the air at our club station K6DKX. We have noticed that many of the novices never get on the air, because they can't afford to buy their own equipment and subsequently lose interest in our hobby altogether. Jack is now teaching the recently licensed new hams once a week at the fire station club house the use of the ham language. He is also conducting dry-runs of QSO's, instructs the new ticket holders to operate radio equipment properly and gives them a taste of copying morse code off the air. Many of these novices find it much more difficult to copy off the air, because of QRM and the audacity of other CW stations to interfere with the transmission they are trying to copy. Well anyhow, Jack feels sure that everyone should be ready to go on the air early next month and experience the excitement of the first QSO.

In the name of the club I wish to thank both of our Jack's for their great effort in helping our young people get their license and then get ready to go on the air, because as we have seen, the ticket is only a piece of paper and it does not instantly qualify one to operate a ham radio station. This is true ham spirit and spells PALLIGIANOLIS in capital letters.

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